

General Subject: **Clean Water Act Section 401 Water Quality Certifications**

Page(s): 1

Line (s):

Relates to What General Regulatory Authority (NPDES, TMDL, Title 27, Non-15, etc.):
CWA Section 401

Specific Comment:

We have reviewed the document and have the following comments:

All regulatory language (i.e., Basin Plan, TMDL, 303(d), Antidegradation Policy) provided to DWR staff by 401 Water Quality Certification staff over the past two years has been incorporated into the Administrative Draft EIS/EIR for the BDCP.

The BDCP is a Habitat Conservation Plan and Natural Community Conservation Plan which is seeking permit approval by the United States Fish and Wildlife and National Marine Fisheries Services, and California Department of Fish and Wildlife, respectively. The proposed permit duration is 50 years. Near-term project implementation is expected to be completed in 35-years, while long-term implementation stages will be completed within the proposed permit term. The Administrative Draft EIS/EIR for the BDCP describes the Clean Water Act Section 401 Water Quality Certifications, Clean Water Act Section 404 and Rivers and Harbors Act Section 10 are described in Chapter 8, on pages 8-108 through 8-109.

Based on the project description provided, CM 1 (Water Facilities and Operations) will result in hydrologic impacts, CMs 2 through 11 will result in restoration of wetlands, and CMs 12 through 22 include measures to reduce the effect of various stressors on covered species. At a minimum, CM 1 through 11 will require Clean Water Act Section 401 Water Quality Certifications to be issued. In the Administrative Draft EIS/EIR, only CM 1 was described at the project-specific level; all other Conservation Measures were described at a programmatic level. CM 1 is primarily focused on managing the routing, timing, and amount of flow through the Delta while establishing an interconnected system of conservation lands across the Plan Area.

Project Description

The project description provided for CM 1 in the BDCP should be consistent with the project description provided in the Clean Water Act Section 404/Rivers and Harbors Act Section 10 and Clean Water Act Section 401 Water Quality Certification application(s). The project description for the BDCP should be expanded to include clarification at the proposed geographical locations(s) for:

1. Modification of any transportation and/or utility routes, and/or levee systems to accommodate the construction and implementation of the proposed project;

2. Estimated acreage and/or linear feet in impacts to waters of the United States, including, but not limited to, modifications of transportation and utility routes, and/or levee systems; physical project components (i.e., pump intakes, pumping plants, pipelines, tunnels and tunnel alignments, canals, forebays, concrete batch plants, fuel stations, barriers and gates); and operational components;
3. volume (cubic yards) and anticipated frequency of sediment removal activities; and
4. areal extent and anticipated frequency of vegetation removal and revegetation activities.

Contact for Clarifying Information: Gen Sparks

**General Subject: Storm water discharges associated with industrial activities;
Required permits**

Page(s): Chapter 3, page 3-27

Line (s): 34 to 43

Relates to What General Regulatory Authority (NPDES, TMDL, Title 27, Non-15, etc.): NPDES

Specific Comment: USEPA regulations require that certain types of industrial activity have an NPDES Industrial Stormwater Permit. Such activities include corporation yards, equipment storage and maintenance areas, materials storage areas, and manufacturing facilities, such as concrete batch plants. Whether or not permit coverage is needed depends on the type of activity, size of the facility, and whether those activities have the potential of adding pollutants to stormwater runoff. The remainder of this comment addresses concrete batch plants specifically, but similar comments are applicable to a wide variety of industrial activities that could be part of the project.

The draft EIR notes that temporary concrete batch plants may be used at various locations to support project construction. Storm water runoff from industrial concrete batch plant sites has the potential to carry industrial pollutants such as metals, suspended solids, oil and grease, and high pH water to surface and ground water. Concrete wash water typically has very high pH, high salinity, and concentrations of dissolved metals (primarily hexavalent chromium) that could cause significant water quality impacts. If exposed to the environment, the solids settling from concrete wash water may continue to leach alkalinity, dissolved solids, and/or dissolved metals after the water has been decanted.

Batch plants are one of the many types of industrial activities required by federal Clean Water Act to obtain coverage under an NPDES permit for storm water discharges. In California, NPDES permit coverage for industrial sites is available through the State Water Board's *General Industrial Activities Storm Water Permit, Water Quality Order No. 97-03-DWQ* (Industrial General Permit or IGP). Please note that a new Industrial General Permit is in preparation at the State Water Resources Control Board, and it may include additional or modified requirements than the current permit.

Operators of industrial batch plants follow a site -specific Storm Water Pollution Prevention Plan (SWPPP) and monitoring program to identify sources of pollution that affect the quality of storm water discharges through grab sampling and visual

observations. The SWPPP should include a description and implementation of best management practices (BMPs) to reduce or prevent pollutants in industrial storm water discharges. Good site management and properly installed BMPs reduce the amount of site related contaminants that will be discharged off an industrial site during rain events. Wherever practical, generation of concrete wash water should be minimized and the wash water should be recycled within the batch plant. It should not be discharged to either surface waters or land for disposal purposes, and short-term settling or storage containment features should be engineered to prevent percolation of the waste. Containment and disposal of concrete waste and wastewater may be subject to other permit requirements from the Regional Board. Comments on those requirements are provided elsewhere. The EIR should address how the project proponent will comply with the IGP and how the batch plant wastewater and residual solids will be managed.

Application for coverage under the Industrial General Permit is completed by submitting a complete Notice of Intent, site map, and the annual Industrial General Permit fee of \$1,359 to the State Water Resources Control Board in Sacramento. Although a Waste Discharge Identification Number (WDID) is generally issued within two to three weeks after a complete NOI and attachments are submitted, the project proponent should allow adequate time to develop a SWPPP prior to applying for permit coverage.

Contact for Clarifying Information: Robert Ditto

General Subject: Impacts to Surface Water Quality Associated with Construction-Related Activities

Page(s): Various

Line (s): Various

Relates to What General Regulatory Authority (NPDES, TMDL, Title 27, Non-15, etc.): NPDES

Specific Comment: Discharge of dewatered groundwater to surface water poses a threat to surface water quality and is regulated by the Central Valley Water Board.

The construction of CM1 will require groundwater dewatering operations for the construction of intakes, intake pipelines, and conveyance facilities (tunnels). The groundwater pumping would occur 24 hours per day, 7 days a week. Dewatering requirements were assumed to range from approximately 240 to 10,500 gpm. Groundwater would be treated, as necessary, and discharged to surface waters in accordance with a National Pollutant Discharge Elimination System (NPDES) permit.

The EIR describes the types of construction requiring dewatering and the range of dewatering pumping rates. However, the number of discharge locations and duration of discharges are not discussed. Dewatering discharges are typically considered a low or limited threat to water quality. However, the EIR should consider the possibility of encountering groundwater that has been polluted by leaking underground fuel storage tanks and spills of pesticides or other toxic or hazardous substances. It may be necessary to treat the water prior to surface water discharge to prevent impacts to water quality.

The Central Valley Water Board would regulate these surface water discharges under an NPDES permit. The project proponent should plan to submit a Report of Waste Discharge at least one year prior to beginning construction. Based on the proposed discharge rates, the Central Valley Water Board may authorize discharge under an individual NPDES permit or Order R5-2008-0082-01, *General Order for Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water* (Limited Threat General Order).

Application requirements for the Limited Threat General Order are contained in Attachment G of Order R5-2008-0082-01, and can be found on the Central Valley Water Board website at

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2008-0082-01.pdf. In general, the applicant must include USEPA Application Forms 1 and 2D; State Water Board Form 200, including a project map which shows the

location of the project, discharge point(s), and receiving water; a full description of the proposed project on official letterhead; blueprints of the proposed treatment system signed by a Registered Engineer or Geologist (if applicable); analysis of the proposed effluent for pollutants listed in Attachment B, Attachment C (if applicable), and any applicable 303(d) listed pollutants for the receiving water if proposing to discharge to an impaired waterbody; an evaluation of reclamation options; public notice requirements; and the appropriate fee. Water quality sampling for all constituents listed in Attachment B and C of the Limited Threat General Order and a sample of the 5-day biochemical oxygen demand (BOD₅).

Contact for Clarifying Information: Jim Marshall (916) 464-4772

General Subject: **Mercury Contamination**

Page(s): Various

Line (s): Various

Relates to What General Regulatory Authority (NPDES, TMDL, Title 27, Non-15, etc.):
Water Quality

Specific Comment:

The environmental evaluation for the project anticipates a cumulative adverse impact with respect to mercury contamination. Conservation Measure 12 is designed to reduce adverse impacts caused by Conservation Measures 2, 4, 5, and 10, which are associated with wetland and floodplain habitat restorations. Mitigation measures include, but are not limited to, conforming to the relevant requirements of the Delta Mercury Control Strategy and the Central Valley Regional Water Control Board Basin Plan such as: required participation in efforts to minimize risks to human consumers of contaminated fish, participation in monitoring methylmercury loading from wetlands, and implementing appropriate and site-specific methylmercury control measures. The analyses acknowledge that mercury and methylmercury control measures are still in development, and it assumes that all practical measures will be implemented if reasonable and feasible. The analyses anticipate that not all contributions of methylmercury can be mitigated, and that even after all feasible mitigation measures are implemented, some adverse cumulative impacts may remain.

No adverse impacts with respect with mercury contamination were found in the upstream project areas, however, adjustments to water management in upstream reservoirs may influence mercury transport, methylmercury production, and methylmercury bioaccumulation in reservoirs and downstream of reservoirs. Reservoir creation and operation has been shown to create local hotspots of mercury methylation and bioaccumulation. Some of the factors that have been found to likely influence methylmercury production or fish methylmercury bioaccumulation in California reservoirs include: reservoir depth, temperature, thermal stratification and hypolimnetic anoxia, water level fluctuations, aqueous and sediment inorganic mercury and methylmercury concentrations, chlorophyll-a concentrations, and specific conductivity (Louie et al. 2012; Negrey et al. 2012). Fish mercury levels have been found to be statistically proportional to the amount of land flooded and the ratio of surface area to volume flooded in reservoirs in the United States and Canada (Bodaly et al. 2007; Johnston et al. 1991; Selch et al. 2007). The magnitude of reservoir water level fluctuations have been identified worldwide as an important factor in determining fish mercury levels (Evers et al. 2007; Roulet et al. 2001; Sorensen et al. 2005). A similar relationship has been found in California reservoirs, where a statistically significant positive correlation has been observed between California reservoir fish mercury concentrations and annual mean reservoir fluctuations (Louie et al. 2012). If the

magnitude and timing of reservoir releases increase the magnitude of reservoir level fluctuations in project reservoirs, then this could result in increased mercury contamination in Central Valley Project and State Water Project reservoirs.

Regional Board staff agrees with the assessment that the project will result in a cumulative adverse impact of increasing methylmercury levels in the Delta. Staff will be closely following the development of methylmercury control measures that are required by the Basin Plan. Staff recommends that the authors address the potential changes to mercury and methylmercury in the upstream project areas.

Contact for Clarifying Information:
Stephen Louie

Bodaly, D., W. Jansen, A. Majewski, R. Fudge, N. Strange, A. Derksen, and D. Green. 2007. Postimpoundment Time Course on Increased Mercury Concentrations in Fish in Hydroelectric Reservoirs on Northern Manitoba, Canada. *Archives of Environmental Contamination and Toxicology*, 53: 379-389.

Evers, D., Y. Han, C. Driscoll, N. Kamman, M. Goodale, K. Lambert, T. Holsen, C. Chen, T. Clair, and T. Butler. 2007. Biological Mercury Hotspots in the Northeastern United States and Southeastern Canada. *Bioscience*, 57(1): 29-43.

Johnston, T., R. Bodaly, and J Mathis. 1991. Predicting Fish Mercury Levels from Physical Characteristics of Boreal Reservoirs. *Canadian Journal of Fisheries and Aquatic Sciences*, 48: 1468-1475.

Louie, S., M. Wood, and C. Austin. 2012. Development of a Statewide Mercury Control Program for Reservoirs. Poster Presentation Abstract, 7th Biennial Bay-Delta Science Conference. Sacramento, California., Available at:
<http://scienceconf.deltacouncil.ca.gov/content/poster-abstracts>

Negrey, J., W. Heim, M. Stephenson, and K. Coale. 2012. Mercury in California Lakes and Reservoirs: Factors Influencing Bioaccumulation in Black Bass. . Poster Presentation Abstract, 7th Biennial Bay-Delta Science Conference. Sacramento, California., Available at: <http://scienceconf.deltacouncil.ca.gov/content/poster-abstracts>

Roulet, M., J. Guimaraes, and M. Lucotte. 2001. Methylmercury Production and Accumulation in Sediments and Soils of an Amazonian Floodplain – Effect of Seasonal Inundation. *Water, Air, and Soil Pollution*, 128: 41-60.

Selch, T., C. Hoagstrom, E. Weimer, J. Duehr, and S. Chipps. 2007. Influence of

Fluctuating Water Levels on Mercury Concentrations in Adult Walleye. Bulletin of Environmental Contamination and Toxicology, 79: 36-40.

Sorensen, J. A., L. W. Kellemeyn, and M. Sydor. 2005. Relationship between mercury accumulation in young-of-the-year yellow perch and water-level fluctuations. Environmental Science and Technology 39:9237–9243.

General Subject: Impacts to Groundwater Quality Associated with Construction;
Required Permits

Page(s): Various

Line (s): Various

Relates to What General Regulatory Authority (NPDES, TMDL, Title 27, Non-15, etc.): Waste Discharge to Land (Non 15)

Specific Comment: Discharge of concrete wash water to land poses a threat to groundwater quality and is regulated by the Central Valley Water Board.

The EIR should consider storage, management and disposal of wash water from concrete batch plants and associated equipment washing. Concrete wash water typically has very high pH, high salinity, and concentrations of dissolved metals (primarily hexavalent chromium) that could cause significant water quality impacts. If exposed to the environment, the solids that settle from concrete wash water may continue to leach alkalinity, dissolved solids, and/or dissolved metals after the water has been decanted.

Although it identifies potential batch plant locations, the EIR does not provide specific details regarding the volume of concrete that would be used at each batch plant, nor does it discuss how the resulting wastewater and residual solids would be managed or disposed of.

Wherever practical, generation of concrete wash water should be minimized and the wash water should be recycled within the batch plant. It should not be discharged to either surface waters or land for disposal purposes, and short-term settling or storage containment features should be engineered to prevent percolation of the waste. For example, Caltrans' *Construction Site Best Management Practices Manual* standard storm water best management practices (BMPs), specifically BMP WM-8 (Concrete Waste Management), is adequate to protect surface water quality. With some additional modification to the wash water containment system design and operation, strict adherence to BMP WM-8 would also protect groundwater quality at the batch plant site. Specifically, we recommend the following:

1. Increasing the thickness of the wash water containment sump's polyethylene liner to 40 mils to improve liner durability;
2. Frequent (daily) decanting of liquid from the lined impoundment to a leak-free tank or bin for recycling in the batch plant.
3. Providing a paved (or plastic-lined) and bermed area for curing waste or rejected concrete until the material has cured in place for at least one week.

The Central Valley Water Board would regulate these facilities under Waste Discharge Requirements or a Conditional Waiver of Waste Discharge Requirements. The project proponent should plan to submit a Report of Waste Discharge at least one year prior to beginning this type of construction.

In order to support adoption of WDRs or a waiver, the EIR should disclose (in general terms) the volume of concrete and Portland cement-based grout that the project would utilize for each type of construction; the expected volume of wash water per unit of concrete (e.g., gallons per 100 cubic yards); the methods of wash water containment and disposal that might be utilized; and the method(s) of residual solids handling, storage, and disposal. If recycling the wash water is not a viable option, the EIR should also discuss the expected chemical character of the waste with respect to pH, total dissolved solids, hexavalent chromium and other dissolved metals; and the methods of containment, treatment, and disposal that might be utilized.

Contact for Clarifying Information: Anne Olson

General Subject: Impacts to Groundwater Quality Associated with Construction;
Required Permits

Page(s): Various in Section 8.3.3

Line (s): Various

Relates to What General Regulatory Authority (NPDES, TMDL, Title 27, Non-15, etc.): Waste Discharge to Land (Non 15)

Specific Comment: Discharge of water from dewatering that has contacted uncured concrete poses a threat to groundwater quality and is regulated by the Central Valley Water Board.

The EIR should consider storage, management and disposal of dewatering waste that has contacted uncured concrete or other cementitious materials. The construction of concrete structures involving placement of concrete in-stream or below the water table can generate dewatering waste that is similar in character to concrete wash water.

The EIR does not provide specific details regarding construction staging areas, the number of and type of subsurface concrete structures, or the volume of concrete that would be used, nor does it discuss how the resulting wastewater and residual solids would be managed or disposed of.

Depending on the volume of water generated at each location, it may be possible to neutralize the water and then discharge to land discharge for disposal without causing significant impacts to water quality.

Small discharges of this type could be regulated under the State Water Resources Control Board's *Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality* (Water Quality Order 2003-0003-DWQ or subsequent general WDRs order). In general, short-term containment should be provided to allow for pH testing and addition of the minimum required dose of neutralizing agent prior to discharge. If the waste will be discharged to land not owned by the state, the landowner's permission must be obtained. The Executive Officer of the Central Valley Water Board can authorize coverage under the Statewide General WDRs, and the project proponent should plan to submit an application for coverage (known as a Notice of Intent) at least 90 days prior to beginning this type of construction.

Larger discharges of dewatering waste contaminated by contact with uncured concrete may require additional treatment to reduce the concentration of dissolved metals and/or carefully controlled discharge, and individual Waste Discharge Requirements adopted by the Central Valley Water Board may be needed. The project proponent should plan to submit a Report of Waste Discharge at least one year prior to beginning this type of construction.

In order to support coverage under the statewide general WDRs or adoption of individual WDRs or a waiver, the EIR should disclose (in general terms) the number of underground concrete structures that may require underwater placement on concrete; the expected volume of contaminated dewatering waste per location; the expected chemical character of the waste with respect to pH, total dissolved solids, hexavalent chromium and other dissolved metals; and the methods of containment, treatment, and disposal that might be utilized.

Contact for Clarifying Information: Anne Olson

General Subject: Impacts to Groundwater Quality Associated with Construction;
Required Permits

Page(s): Various

Line (s): Various

Relates to What General Regulatory Authority (NPDES, TMDL, Title 27, Non-15, etc.): Waste Discharge to Land (Non 15)

Specific Comment: Discharge of water from ordinary construction dewatering poses a threat to groundwater quality is regulated by the Central Valley Water Board

The EIR should consider storage, management and disposal of water from construction dewatering.

The EIR does not provide specific details regarding construction staging areas, the

number of and type of excavations or in stream structures that would require dewatering during construction nor does it discuss how the resulting wastewater and residual solids would be managed or disposed of.

Dewatering discharges to land often pose little or no threat to groundwater quality. However, the EIR should consider the possibility that excavation may encounter groundwater that has been polluted by leaking underground fuel storage tanks and spills of pesticides or other toxic or hazardous substances. Depending on the volume of water generated at each location, it may be necessary to treat the water prior to land disposal without causing significant impacts to water quality.

Small, short term discharges of uncontaminated groundwater to land may qualify for coverage under the Central Valley Water Board's *Waiver of Reports of Waste Discharge and Waste Discharge Requirements for Specific Types of Discharge within the Central Valley Region* (Resolution R5-2008-0182 or subsequent general waiver).

Longer term discharges or those that require treatment prior to discharge could be regulated under the State Water Resources Control Board's *Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality* (Water Quality Order No. 2003-0003-DWQ or subsequent general order). In general, short-term containment should be provided to allow for testing and treatment if required prior to discharge. If the waste will be discharged to land not owned by the state, the landowner's permission must be obtained. The Executive Officer of the Central Valley Water Board can authorize coverage under the Statewide General WDRs, and the project proponent should plan to submit an application for coverage (known as a Notice of Intent) at least 90 days prior to beginning this type of construction.

Very large or long term/permanent dewatering discharges to land may require individual Waste Discharge Requirements adopted by the Central Valley Water Board. The project proponent should plan to submit a Report of Waste Discharge at least one year prior to beginning this type of discharge.

In order to support coverage under the statewide general WDRs, coverage under the low threat waiver, or adoption of individual WDRs, the EIR should disclose (in general terms) the number and type of excavations that may require dewatering; the expected volume of dewatering waste per location; the expected chemical character of the waste with respect to any known or suspected contaminants; and the methods of containment, treatment, and disposal that might be utilized.

Contact for Clarifying Information: Anne Olson

General Subject: Impacts to Groundwater Quality Associated with Construction;
Required Permits

Page(s): Various

Line (s): Various

Relates to What General Regulatory Authority (NPDES, TMDL, Title 27, Non-15, etc.): Waste Discharge to Land (Title 27)

Specific Comment: Discharge of dredge spoils to land poses a threat to groundwater and surface water quality and is regulated by the Central Valley Water Board

The EIR does not provide details on how much material from the various options under consideration, will be classified as dredge spoils. This designation applies to material removed below the Mean High Water (MHW) tidal datum. Material classified as dredge spoils will require Waste Discharge Requirements (WDR's) for the removal, upland placement (including both temporary dewatering sites and long-term placement or disposal sites) and/or subsequent reuse.

Dredged material removed by hydraulic cutterhead suction requires large dewatering ponds, and any discharge of the clarified slurry water will be regulated under the terms of the WDR to prevent water quality impacts to surface waters.

Dredged material placement on land must satisfy the criteria of being inert waste, in the placement location. Material not classified as inert requires the installation of liners and/or other impervious barriers according to Title 27 guidelines for the protection of groundwater and/or surface waters.

Pre-dredge sediment characterization and placement site soil sampling is required in order to determine if the dredged material meets the criteria of being inert at the placement site location. Material should be tested for leachable constituents, acid generation potential, and other constituents of concern that may be identified as being present.

Approval of dredging WDR's by the Central Valley Regional Water Quality Control Board in a public hearing (scheduled approximately every two months), requires submittal of a complete Report of Waste Discharge (ROWD) a minimum of 4-6 months prior to the scheduled Board meeting.

Currently no dredging General Order permits are in place to cover new-work projects of this nature.

Contact for Clarifying Information: Dr. Philip Giovannini

General Subject: Impacts to Groundwater Quality Associated with Construction;
Required Permits

Page(s): Various

Line (s): Various

Relates to What General Regulatory Authority (NPDES, TMDL, Title 27, Non-15, etc.): Waste Discharge to Land (Title 27)

Specific Comment: Discharge of peat or other soils from tunnel boring to land poses a threat to surface and groundwater quality and could cause nuisance odors, and is regulated by the Central Valley Water Board

Material will be excavated according to the various options under consideration in the EIR. There are potential water quality issues at the point of excavation, and at storage, disposal and reuse areas. Potential waste issues include:

- 1) Runoff of water from excavated materials to surface waters, which is discussed separately under NPDES Permits.
- 2) Percolation of water into groundwater. If the percolating water is similar to underlying groundwater, there may not be a water quality issue. However if the excavated material contains saline water or other contaminants, there may be a potential for pollution of underlying groundwater. The chemical and physical properties of the excavated materials will need to be assessed relative to the potential for groundwater impact. Waste Discharge Requirements may be needed to prevent groundwater pollution dependent upon the characteristics of the excavated material and the site conditions at the storage, reuse or disposal area.
- 3) If the excavated material has the potential to generate acidic conditions after excavation, the acidic conditions may dissolve metals and other materials in the soils that are normally insoluble, and thus not a groundwater threat. The acid generation potential of excavated materials must be assessed to determine if Waste Discharge Requirements are needed, and whether measures must be taken to prevent groundwater pollution.

Dredged material placement on land must satisfy the criteria of being inert waste, in the placement location. Material not classified as inert requires the installation of liners and/or other impervious barriers according to Title 27 guidelines for the protection of groundwater and/or surface waters.

Pre-excavation soil characterization and placement-site soil sampling is required in order to determine if the dredged material meets the criteria of being inert at the placement site location. Material should be tested for leachable constituents, acid

generation potential, and other constituents of concern that may be identified as being present.

Approval of WDR's by the Central Valley Regional Water Quality Control Board in a public hearing (scheduled approximately every two months), requires submittal of a complete Report of Waste Discharge (ROWD) a minimum of 4-6 months prior to the scheduled Board meeting.

Currently no General Order permits are in place to cover new-work projects of this nature.

Contact for Clarifying Information: Dr. Philip Giovannini